

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	09/750,673	MORITZ ET AL.	
	Examiner	Art Unit	
	Fred Ferris	2128	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 14 October 2005.
2. ☒ The allowed claim(s) is/are 1-4, 7-9, 11 and 12.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>01062006</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|   | 9. <input type="checkbox"/> Other _____.   |

*Fred Ferris*  
*10/21/05*

### **DETAILED ACTION**

1. *This Office Action is responsive to applicant's amendment filed 14 October 2005 and interview conducted with applicant's representative 4 January 2006. (See: Interview Summary, Examiner's Amendment) Applicants have now canceled claims 5, 6, 10, and 13-26. Amended claims 1-4, 7-9, and 11-12 have been allowed over the prior art of record.*

### **EXAMINER'S AMENDMENT**

2. *An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.*

*Authorization for this examiner's amendment was given in a telephone interview with Natalya Dvorson on 4 January 2006.*

### **AMENDMENTS TO THE CLAIMS**

Amend claim 1 as follows:

1. (currently amended): A device for generating a virtual installation model as an image of a real installation, comprising:
  - a first memory for storing picture data of the real installation;
  - a second memory for storing information data of installation components of a component library;

Art Unit: 2128

a third memory for storing the virtual installation model; and  
an evaluation-and-control-unit for comparing the information data of the installation components with the picture data of the real installation, for identifying identified components in the picture data as respective ones of the installation components, for deriving hypotheses regarding the identified components in the picture data, and for assigning the respective identified ones of the installation components to the virtual installation model,

**wherein the evaluation-and-control-unit is configured to control a building-up process of the virtual installation model, in which at least one of the installation components selected from the component library is dragged into a screen section that is assigned to display the picture data of the real installation, and**

**wherein the evaluation-and-control-unit is configured to evaluate geometric properties of the picture data in order to reconcile the selected and dragged installation component with the identified installation components identified in the picture data of the real installation, and wherein, after a successful reconciliation, the selected and dragged installation component is assigned to a respective one of the identified installation components.**

*Cancel claims: 5, 6, 10, and 13-26 (cancelled)*

### ***Response to Arguments***

3. *Applicant's arguments filed on 14 October 2005 have been fully considered and found to be persuasive. Previous prior art rejections are now withdrawn in view of applicant's amendment to the claims by examiners amendment, and cancellation of claims 5, 6, 10, and 13-26.*

### ***Allowable Subject Matter***

4. *Claims 1-4, 7-9, and 11-12 have now been allowed over the prior art of record.*

*The following is an examiner's statement of reasons for allowance:*

*Applicants are disclosing a device for creating a virtual model of an installation (facility) using image recognition/analysis techniques to identify components, (e.g. valves, piping, tanks) based on geometric properties within image data from which virtual representation of the facility is created. This has been disclosed in the prior art of record.*

*While these features are individually disclosed in the prior art, the prior art of record does not meet the conditions as suggested in MPEP section 2132, namely:*

*"The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an **ipsissimis verbis** test, i.e., identity of terminology is not required. **In re Bond**, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)."*

*While the prior art of record renders obvious the claimed elements relating to a first memory storing picture data of an installation, a second memory storing information of installation component, and a third memory for storing a virtual installation model, it does not explicitly disclose these elements in combination with an evaluation-and-control-unit for comparing the information data of the installation components with the picture data of the real installation, and identifying components as installation components, and further deriving a hypotheses for assigning identified installation components to a virtual installation model via a building-up process to reconcile the selected (dragged) installation components as being of the real installation identified components, as now required by the amendment to independent claim 1. (See: Figures 9, 10 for example) Here the examiner has interpreted the configuration and operation of the claimed evaluation-and-control-unit as defined in applicant's specification on page 15, line 6 to page 18, line 21, and in Figures 1-10.*

*The closest prior art uncovered during examination teaches certain limitations of the claimed invention as follows:*

- *"Three Dimensional Object Recognition", Besl et al: Teaches computer based methods and systems for the identification of 3D objects by comparing object information data with image (picture) data and evaluating geometric primitives, and the use of an object model library including memory picture and object information. However, Besl does not teach the specific combination of elements required by the present inventions evaluation-and-*

control-unit or a virtual representation (model) of a facilities installation as now recited in independent claim 1.

- U.S. Patent 5,740,341 issued to Oota et al: teaches a system capable of displaying and modeling a virtual representation of installed components (i.e. a virtual model) in a facility or building including components (piping, etc.) that have been interactively arranged to form a virtual model, but does not teach combination of elements required by the present inventions evaluation-and-control-unit or comparing and identifying the information data of installation components with the picture data of a real installation.
- "Reconstruction of 3D Virtual Buildings fro 2D Architectural Floor Plans", So et al: teaches the use of commercially available virtual reality modeling software in creating a virtual installation model of a building that includes installation components, but again does not teach combination of elements required by the present inventions evaluation-and-control-unit or comparing and identifying the information data of installation components with the picture data of a real installation.

The specific combination of elements as noted above renders the claimed invention non-obvious over the prior art of record. Dependent claims 2-4, 7-9, and 11-12 are deemed allowable as depending from independent claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

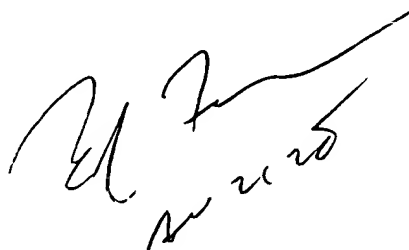
Art Unit: 2128

*accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."*

### **Conclusion**

5. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached at 571-272-2279. The Official Fax Number is: (703) 872-9306*

*Fred Ferris, Patent Examiner  
Simulation and Emulation, Art Unit 2128  
U.S. Patent and Trademark Office  
Randolph Building, Room 5D19  
401 Dulany Street  
Alexandria, VA 22313  
Phone: (571-272-3778)  
Fred.Ferris@uspto.gov  
5 January 2005*

A handwritten signature in black ink, appearing to read 'Fred Ferris', with a date '1/5/05' written below it.